

PACIFIC FISHERY MANAGEMENT COUNCIL

SACRAMENTO RIVER FALL CHINOOK

GOALS AND PERFORMANCE

California Department of Fish and Game
Marine Resources Division
Ocean Salmon Project

PFMC GOALS FOR C.V. SECTION
1985 FRAMEWORK PLAN

Option 3 (adopted by the Council): Achieve a single river spawning escapement goal range of 122,000 to 180,000 Sacramento River chinook. Within this range annual escapements can be expected to vary. Separate goals for the upper and lower Sacramento stocks are not established. The California Department of Fish and Game has provided the following information on state distribution goals and the rationale for this option:

California Department of Fish and Game Distribution Goals for
Sacramento River Fall Chinook Salmon 1/

Upper-River:	Natural	99,000
	Hatchery	9,000
Total Upper-River		108,000
Lower-River:		
Feather -	Natural	27,000
	Hatchery	5,000
Yuba -	Natural	10,000
American -	Natural	24,000
	Hatchery	6,000
Total Lower-River		72,000
Total Sacramento		180,000

1/ Distribution goals will not be used as a basis for ocean management. These will be used as management goals by agencies having in-river management responsibilities. Until passage problems at the Red Bluff Diversion Dam are corrected, the up-river distribution goals are not expected to be achieved.

Rationale for Single Sacramento River System Goal Expressed as a Range

Management of ocean fisheries by the PFMC is limited to the management of ocean harvest. Presently there are no techniques for selective management of different stocks of Sacramento River fall chinook salmon. Ocean harvest management only can provide for a target ocean escapement of Sacramento River fall chinook. Once the fish have entered the river, distribution of fish within the system is dependent on factors such as water flow, habitat, water quality, fish passage barriers, and hatchery practices. It is likely that future increases in water development, increased water export, and stream channelization will reduce the production capacity of portions of the Sacramento River system. Mitigating for these losses may necessitate increasing production in other portions of the system.

The only portion of the system currently not meeting escapement goals is the upper Sacramento River. Lower Sacramento River 1979-82 escapements have averaged 138 percent (99,700) of the new CDFG lower-river goal of 72,000 and 122 percent of the recent state goal of 82,000 chinook.

Fish passage and water quality problems are largely responsible for the upper-river spawning escapement shortfall. Since upper-river fall chinook cannot be selectively managed in the ocean fisheries, attainment of present upper-river escapement goals by reducing ocean harvest would necessitate reducing harvest of abundant lower-river stocks, thereby increasing lower-river escapement

still higher over escapement goals. As an example, based on the team analysis, the restrictive USFWS proposal for managing Sacramento stocks in 1983 would have resulted in 92,000 and 193,000 adult fall chinook returning to the Upper and Lower Sacramento River systems, respectively. In 1984, returns would be even higher because two year classes would be impacted by the regulations rather than one, resulting in 130,000 and 271,000 returning to the Upper and Lower Sacramento, respectively. Since the lower-river spawning escapement goal is 72,000 salmon, restrictive regulations designed to meet upper-river goals would result in gross over-escapement into the lower-river.

For these reasons, an interim spawning escapement goal range for the Sacramento River is established until such times as the problems caused by the Red Bluff Diversion Dam are rectified, and the full production of salmon in the Upper Sacramento River can be realized. For the period 1979 to 1983, Upper Sacramento fall chinook runs have fallen from 81,700 to 51,500 adult chinook. The rate of decline appears to be slowing and will likely stabilize at about 50,000 adults. Therefore, the lower end of the aggregated Sacramento River goal range of 122,000 adult chinook is based on 50,000 upper-river adult chinook and 72,000 lower-river adult chinook.

Rationale for Combined Sacramento Hatchery and Natural Escapement Goal

Escapement data for the Sacramento River are grouped into four production units. Salmon stocks in three of these production units, the American River, Feather River, and upper Sacramento River, are enhanced by mitigation hatcheries.

The separation of hatchery and natural fish in these units is artificial. Returns to hatcheries on the American and Feather rivers have exceeded hatchery capacities in recent years. Once capacity is reached, the ladders are closed and fish that would have returned to the hatchery remain in the river and are counted as natural spawners. Also, naturally-produced salmon commonly return to the hatchery, thus becoming hatchery fish. In 1982 Coleman Hatchery took 7,200 fish in excess of its goal and greatly exceeded hatchery capacity. Had these fish not been taken, they would have become natural spawners.

The distinction between natural and hatchery stocks has become lost in these portions of the river. Natural spawners are those that spawn in the wild regardless of their origin. The only major tributary with a truly natural run is the Yuba River. Runs in this river have been remarkably stable from 1971-81, averaging about 10,000 adults. The run increased sharply in 1982 to 23,000. The stability of the Yuba River escapement suggests that present and past management practices have not reduced the productivity of natural stocks.

San Joaquin River Escapement

The San Joaquin River system is degraded severely due to water development and pollution. Increases in water transport out of the Delta will further jeopardize the continuation of these runs.

San Joaquin escapement cannot be selectively managed in the ocean. Ocean management for Sacramento River chinook within the escapement range adopted will provide adequate escapement of San Joaquin stocks to achieve spawning requirements.

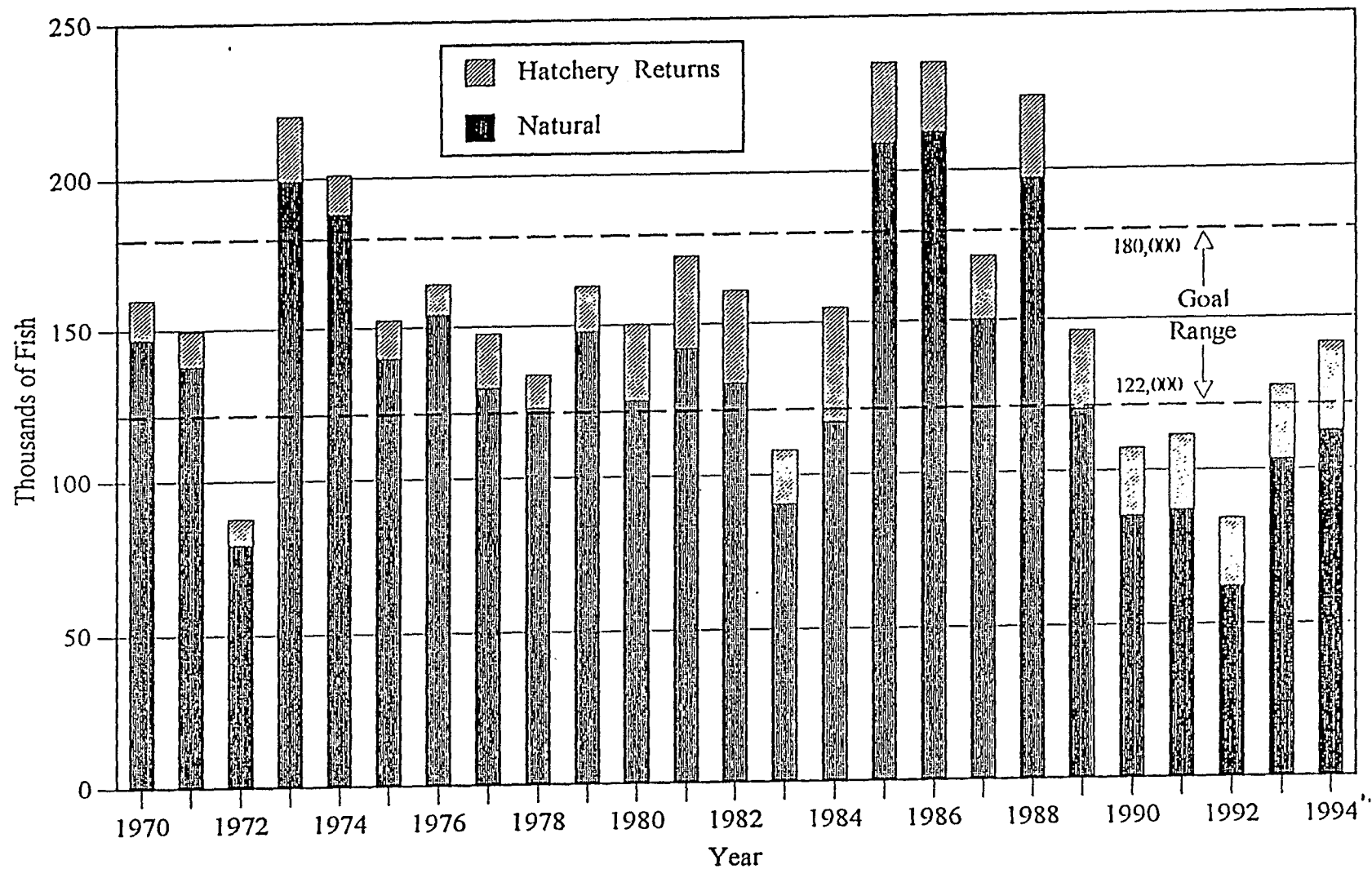


FIGURE II-1. Sacramento River fall chinook spawning escapements, 1970-1994.